**VC-25A** Boeing 747

**Wingspan**: 195 ft
**Length**: 231 ft
**Height**: 63 ft
**Color**: Blue&White
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 150 Knots

**C-32A** Boeing 757

**Wingspan**: 125 ft
**Length**: 159 ft
**Height**: 44 ft
**Color**: Blue&White
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 140 Knots

**C-40B** Boeing 737

**Wingspan**: 113 ft
**Length**: 110 ft
**Height**: 41 ft
**Color**: Blue&White or White
**Normal Rate of Climb**: 2,000 FPM
**Normal Approach Speed**: 125 Knots

**C-17** Globemaster

**Wingspan**: 170 ft
**Length**: 174 ft
**Height**: 55 ft
**Color**: Grey
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 135 Knots

**C-20** Gulfstream III

**Wingspan**: 78 ft
**Length**: 83 ft
**Height**: 25 ft
**Color**: Blue&White or White
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 130 Knots

**C-37A** Gulfstream V

**Wingspan**: 94 ft
**Length**: 96 ft
**Height**: 26 ft
**Color**: Blue&White or White
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 125 Knots

**C-38A** Astrajet

**Wingspan**:55 ft
**Length**: 56 ft
**Height**: 18 ft
**Color**: White
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 125 Knots

**C-21** Learjet 35

**Wingspan**: 40 ft
**Length**: 49 ft
**Height**: 17 ft
**Color**: White
**Normal Rate of Climb**: 2,000 to 4,000 FPM
**Normal Approach Speed**: 140 Knots

**C-12** Beech King Air

**Wingspan**: 35 ft
**Length**: 35 ft
**Height**: 14 ft
**Color**: White
**Normal Rate of Climb**: 1,500 FPM
**Normal Approach Speed**: 140 Knots

**UH-1N** Bell Huey

**Rotor Diameter**: 48 ft
**Length**: 57 ft
**Height**: 12 ft
**Color**: Blue&White
**Normal Rate of Climb**: 800 FPM
**Normal Approach Speed**: 90 Knots

**C-130** Lockheed

**Wingspan**: 132 ft
**Length**: 97 ft
**Height**: 38 ft
**Color**: White
**Normal Rate of Climb**: 1,500 FPM
**Normal Approach Speed**: 140 Knots

**KC-135** Boeing 707

**Wingspan**: 130 ft, 10 in
**Length**: 136 ft, 3 in
**Height**: 41 ft, 8 in
**Color**: Grey
**Normal Rate of Climb**: 1,000 to 2,000 FPM
**Normal Approach Speed**: 145 Knots

**F-16** General Dynamics

**Wingspan**: 31 ft
**Length**: 49 ft, 3 in
**Height**: 18 ft, 4 in
**Color**: Grey
**Normal Rate of Climb**: 6,000 to 9,000 FPM
**Normal Approach Speed**: 150 Knots

**BELL 412**

**Rotor Diameter**: 40 ft
**Length**: 57 ft
**Height**: 12 ft
**Color**: Silver/Blue
**Normal Rate of Climb**: 800 FPM
**Normal Approach Speed**: 90 Knots

**S365** MD State Police

**Rotor Diameter**: 39 ft
**Length**: 38 ft
**Height**: 13 ft
**Color**: Black
**Normal Rate of Climb**: 1000 FPM
**Normal Approach Speed**: 80 Knots

**EA-6B** Prowler

**Wingspan**: 53 ft
**Length**: 59 ft 10 in
**Height**: 16ft 8 in
**Color**: Grey
**Normal Rate of Climb**: 12,900 FPM
**Normal Approach Speed**: 130 knots

**UC-35** Citation V

**Wingspan**: 52 Ft
**Length**: 47 ft 3 in
**Height**: 15 ft
**Color**: White
**Normal rate of Climb**: 3,040
**Normal Approach Speed**: 120

## NEAR MID-AIR COLLISION REPORTING

**Purpose and Data uses:** The primary purpose of the Near Mid-Air Collision (NMAC) Reporting Program is to provide information for use in enhancing the safety and efficiency of the National Aerospace System. The data from these reports is investigated, compiled, and analyzed by the FAA or military safety office which makes safety program recommendations.

**Definition:** A NMAC is defined as an incident associated with the operation of an aircraft in which a possibility of collision occurs as a result of proximity of less than 500 feet to another aircraft, or a report is received from a pilot or a flight crew member stating that a collision hazard existed between two or more aircraft. If the aircrew was forced to take abrupt evasive action to avoid collision or would have taken evasive action if circumstances had allowed, then it is classified as a NMAC.

**Reporting Responsibility:** It is the responsibility of the pilot and/or flight crew to determine whether a NMAC actually occurred and, if so, to initiate a NMAC report. Be specific, as ATC will not interpret a casual remark to mean that a NMAC is being reported. The pilot should state, "I wish to report a near mid-air collision." State your call sign, time and place, altitude or flight level, and a description of the other aircraft. Report incidents as soon as possible to the nearest FAA ATC facility or Flight Service Station. Air Force personnel report details on **AF Form 651** (HATR) within 24 hours to the nearest Air Force Base safety office.

# JOINT BASE ANDREWS NAVAL AIR FACILITY WASHINGTON

# MIDAIR COLLISION AVOIDANCE

Joint Team Andrews supports the most diverse collection of operational aircraft in the United States today. We are the U.S. Air Force, Army, Navy and Marine Corps. Additionally, the Dept of Energy, Maryland State Police and the Civil Air Patrol are part of our Team.

The home of "Air Force One", our unusual mix of large executive support aircraft, low flying helicopters, refueling aircraft, and supersonic fighters contribute to the mid-air collision potential in the Washington D.C.-Baltimore area. We hope this guide proves useful in avoiding areas of congestion, determining the best routes of flight, and minimizing potential conflicts. The 316th WG Flight Safety Office solicits your help in making the skies over this region a safer place to fly. Please feel free to contact us at (301) 981-5808/5806.

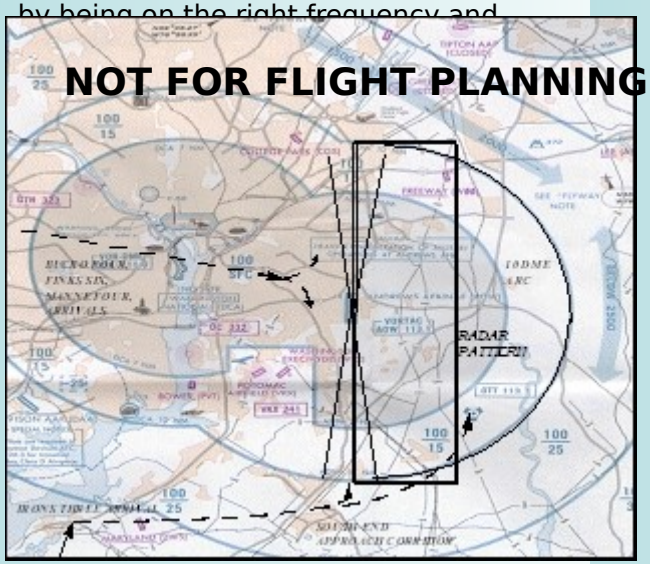
The enclosed material is to be used as a reference in avoiding a mid-air collision. **It is not to be used in flight planning.** All information, descriptions, routes, and procedures are subject to change. To accessed online go to www.andrews.af.mil . Click on the Flight Safety Patch for MACA

## 1st HELICOPTER SQUADRON

The 1st Helicopter Squadron (1HS) operates theUH-1N (Bell 212). These aircraft are painted blue, white and gold and use the call sign “Musel”. Most helicopter flying is conducted under visual flight rules (VFR), between 70-120 knots and 500 - 2,000 feet AGL. Davison AAF, Maryland, Freeway and Lee Airfields are commonly used for transition maneuvers. The 1 HS primarily flies within the Washington DC metropolitan area. When flying on the helicopter route structure (shown below) aircrew will maintain contact with Reagan’s tower (DCA). Outside Washington’s airspace, aircrews will usually monitor Potomac Approach or the nearest UNICOM/CTAF frequency.

## APPROACHES/DEPARTURES

The high volume of military and civilian air carrier traffic in the Baltimore-Washington area, requires air traffic controllers to use standardized arrival and departure routes. These routes aid the controllers in sequencing traffic and reducing the number of radio transmissions. A few of the Andrews Air Force Base arrivals are shown below. Air traffic flying under instrument flight rules (IFR) in the Baltimore-Washington area may be in contact with any one of the three radar service facilities: Baltimore, Washington, or Dulles. Regardless of weather conditions, most aircraft arriving at, or departing from Andrews AFB will be flying under IFR. Over one-third of near mid-air collisions result when an aircraft flying an instrument approach under IFR in good weather comes within close proximity of an aircraft flying under VFR. In most cases, both the IFR and VFR aircraft were legal, but being legal does not prevent a mid-air collision, good visual scanning and situational awareness does. You can improve your situational awareness by being on the right frequency and




**National Transportation Safety Board (NTSB) determined:**

- Most midair collisions occur in VFR during weekend daylight hours.
- The vast majority of accidents occurred at or near uncontrolled airports and at altitudes below 1000 ft.
- Pilots of all experience levels were involved in midair collisions, from first solo ride to 20,000 hour veterans. A flight instructor was on board in 37 percent of the accidents.

**Here are a few tips to avoid a midair collision:**

1. Whether flying IFR or VFR, practice “see and avoid.”

2. Under IFR control, do not count on ATC to keep you away from other aircraft. IFR separation only exists between you and other IFR aircraft. There may be VFR aircraft operating in your environment that ATC is unaware of.

3. Be familiar with the limitations of your eyes and use proper scanning techniques. Movement will get your attention. If an aircraft is not moving in your windscreen, but is increasing in size, then you are on a collision course.

4. Execute appropriate clearing procedures before all climbs, descents, turns, training maneuvers, or aerobatics.

5. Know the airspace and comply with the rules.

6. If your aircraft is equipped with a transponder, use Mode 3/A and Mode C. The Airman’s Information Manual states: *“IN ALL CASES, WHETHER VFR OR IFR, THE TRANSPONDER SHOULD BE OPERATING WHILE AIRBORNE UNLESS OTHERWISE REQUESTED BY ATC.”*

7. Request traffic advisories to assist visual scanning.

8. Always monitor the appropriate frequency, make frequent position reports on your route, and at uncontrolled airports.

9. Make your aircraft as visible as possible - turn on exterior lights below 10,000 MSL and turn on your landing lights when operating within 10 miles of any airport, or in conditions of reduced visibility.

11. When flying at night, don’t use white interior lights. It may take your eyes up to 30 minutes to